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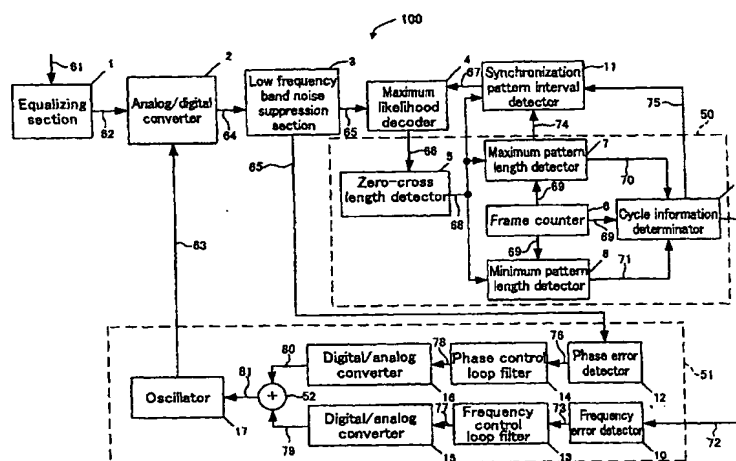
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(54) Title: **FREQUENCY AND PHASE CONTROL APPARATUS AND MAXIMUM LIKELIHOOD DECODER**



(57) Abstract: A frequency and phase control apparatus (100) includes an analog/digital conversion section (62) for converting a reproduction signal into a multiple bit digital (64) signal based on a clock signal (63); a maximum likelihood decoding section (4) for converting the multiple bit digital signal into a binary signal (66); a pattern detection section (50) for detecting a pattern of the binary signal; and a determination section (11) for determining whether or not the multiple bit digital signal and the clock signal are in synchronization with each other based on the detection result. When the determination result of the determination section indicates that the multiple bit digital signal and the clock signal are in synchronization with each other, the maximum likelihood decoding section generates a binary signal based on a first state transition rule (fig.12); otherwise, the maximum likelihood decoding section generates a binary signal based on a second state transition rule (fig.13).

WO 2004/038719 A3



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A. CLASSIFICATION OF SUBJECT MATTER

IPC 7 G11B20/10

According to International Patent Classification (IPC) or to both national classification and IPC

B. FIELDS SEARCHED

Minimum documentation searched (classification system followed by classification symbols)

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Documentation searched other than minimum documentation to the extent that such documents are included in the fields searched

Electronic data base consulted during the international search (name of data base and, where practical, search terms used)

EPO-Internal, INSPEC, WPI Data

C. DOCUMENTS CONSIDERED TO BE RELEVANT

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A	page 5, line 38 - page 18, line 38 figures 3-10	2-11
A	----- US 6 003 153 A (SHIMODA KANEYASU) 14 December 1999 (1999-12-14) column 1, line 1 - column 10, line 52 figures 1-14 claims 1-3	1
A	----- EP 0 822 552 A (CIRRUS LOGIC INC) 4 February 1998 (1998-02-04) abstract page 17, line 32 - page 18, line 10 figures 13A,13B,13C ----- -/-	1,2

☒ Further documents are listed in the continuation of box C.

☒ Patent family members are listed in annex.

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